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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,725	09/15/2003	Melissa Ann Diercks	138681	1504
7590 10/24/2006			EXAMINER	
Paul D. Greeley, Esq. Ohlandt, Greeley, Ruggiero & Perle, L.L.P. 10th Floor One Landmark Square Stamford, CT 06901-2682			KRAMSKAYA, MARINA	
			ART UNIT	PAPER NUMBER
			2858	
DATE MAILED: 10/24/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/662,725	<b>Applicant(s)</b> DIERCKS ET AL.	
	<b>Examiner</b> Marina Kramskaya	<b>Art Unit</b> 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-11,13,15-23,25,27,29,31 and 33-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-11,13,15-21,23,25,27,29,31,33-36,38 and 39 is/are rejected.
- 7) ☒ Claim(s) 22,37 and 40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/23/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 10 and 22 are objected to because of the following informalities: the last step in claims 10 and 22 reads “wherein said first and analog signal and said second analog signal, together, simulate a differential condition between said first power line signal and said second power line signal”.

The following change is suggested by the examiner:

“wherein said first ~~and~~ analog signal and said second analog signal, together, simulate a differential condition between said first power line signal and said second power line signal”.

Appropriate correction is required.

2. Claim 38 is objected to because of the following informalities: the limitation “said electrical switchgear system” in step labeled (i) lacks antecedent basis. Appropriate correction is required.

3. Claim 40 is objected to because of the following informalities: the limitation “said arrangement” in line 3 lacks antecedent basis. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 3-11, 25, 27, and 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims are drawn to a judicial exception. The claims therefore need to either have physical manipulation or a useful, concrete and a tangible result, in addition to data gathering and determining. Although, the claims appear on their face to be useful and concrete, there does not appear to be a tangible result. Merely receiving data is not sufficient to constitute a tangible result, since the outcome of the receiving step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed application can be realized.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 13, 25, 33, 35, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Bouhenguel et al., US 5,742,513.

As per claims 1, 13, 25 and 33, Bouhenguel et al., discloses a method, an arrangement, and a system of testing an electrical switchgear system (i.e. relay system), including a storage medium (memory **41**) comprising instructions for controlling a processor for testing, comprising:

applying an analog signal (from test signal generator **50**) to a first node (first relay component, show by arrows leading to the plurality of relay components) in said electrical switchgear system, wherein said first node (relay) monitors a first power line signal (from power line 3, column 3, lines 16-17) and controls a first breaker (**5**, column 3, line 41, FIG. 4) based on said first power line signal (first of plurality of power line signals **29**, see FIG. 4), and wherein said analog signal simulates (i.e. signal representative of typical power line signal inputs: column 8, lines 63-65) said first power line signal (**29**); and

receiving data indicative of a response of said electrical switchgear system to said analog signal (by signal analyzer **52**),

wherein said data is received from a second node (a second relay component from a plurality of relay components shown by lines in FIG. 5) in said electrical switchgear system, and

wherein said second node monitors a second power line signal (second of plurality of power line signals **29**, see FIG. 4) and controls a second breaker (**5**, each relay controls a breaker) based on said second power line signal (**29**).

As per Claim 35, Bouhenguel discloses an arrangement for testing an electrical switchgear system, comprising:

(a) a generator (test signal generator **50**) for simultaneously applying:

(i) a first test signal (first one of test signals **23n**) to a first node (first relay component) in said electrical switchgear system, wherein said first node monitors a first power line signal (first one of power line signals **29**) and controls a first breaker (**5**, via signal **25**) based on said first power line signal; and

(ii) a second test signal to (second one of test signals **23n**) a second node (second relay component of the plurality shown by lines in FIG. 5) in said electrical switchgear system, wherein said second node monitors a second power line signal (second one of power line signals **29**) and controls a second breaker (**5**, via signal **25**) based on said second power line signal,

wherein said first and second test signals, together, simulate an event that involves both of said first and second nodes (simulates an event that is typical of external inputs from the power lines: column 8, lines 63-65); and

(b) an interface (test signal analyzer **52**) for receiving data indicative of a response of said electrical switchgear system to said application of said first and second test signals (**23n**).

As per Claim 38, Bouhenguel discloses a system comprising:

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(a) a first node (first relay component) that monitors a first power line signal (first of power line signals **29**) and controls a first breaker (**5**, via signal **25**) based on said first power line signal;

(b) a second node (second relay component of the plurality shown by lines in FIG. 5) that monitors a second power line signal (second of power line signals **29**) and controls a second breaker (**5**, via signal **25**) based on said second power line signal;

(c) a switchgear processor (**41'**) that receives a first communication from said first node (first relay component) regarding said first power lines signal (first power line signal **29**), receives a second communication from said second node (second relay component) regarding said second power line signal (second power line signal **29**), and based on said first and second communications, controls said first and second nodes to co-ordinate said control of said first breaker and said control of said second breaker (breakers **5** via signal **25**);

(d) a generator (test signal generator **50**) that simultaneously applies:

(i) a first test signal (first one of signals **23n** labeled "to relay components") to said first node (first one of the relay components) in said electrical switchgear system; and

(ii) a second test signal (second one of signals **23n** labeled "to relay components") to said second node (second one of the relay components),

wherein said first and second test signals, together, simulate an event (simulates an event that is typical of external inputs from the power lines: column

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8, lines 63-65) that involves both of said first and second nodes (relay components); and

(e) an interface (test signal analyzer **52**) that receives data indicative of a response of said electrical switchgear system to said application of said first and second test signals (**23n**).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouhenguel et al., US 5,742,513, in view of Schweitzer, III, US 5,479,315.

As per Claims 3-5 and 15-17, Bouhenguel discloses a method and an arrangement as applied to Claims 1 and 13, above.

Bouhenguel does not explicitly disclose providing an analog signal that

has a magnitude of less than about 10 volts peak-to-peak;

has a magnitude of about 2.5 volts peak-to-peak;

has a magnitude of less than or equal to about 10% of a magnitude of said first power line signal.



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Schweitzer discloses a method and arrangement for testing a switchgear system wherein an analog signal

has a magnitude of less than about 10 volts peak-to-peak (1.4 Volts);

has a magnitude of about 2.5 volts peak-to-peak (1.4 Volts);

has a magnitude of less than or equal to about 10% of a magnitude of said power line signal (analog signal has a magnitude of 1.4 Volts and power line signal has a magnitude of 70 Volts, hence 2% of the magnitude of the power line signal).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply an analog signal of magnitude that is less than 10 volts, about 2.5 volts, and less than 10% of the power line signal, as taught by Schweitzer, in the method and arrangement of Bouhenguel, in order to provide a signal that is suitable for electronic processing circuitry.

9. Claims 6-9, 18-21, 27, 29, 31, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouhenguel et al., US 5,742,513, in view of Lavoie, US 6,798,209 (prior publication US 2003/0132753).

As per Claims 6 and 18, Bouhenguel discloses a method and an arrangement as applied to claims 1 and 13, above.

Bouhenguel does not disclose applying the analog signal while the first node monitors a first power line signal

Lavoie discloses applying the analog signal (**104**) while the first node monitors a first power line signal (**106**), (i.e. signal **106** is not isolated from the node **102**).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the analog signal while monitoring a first power line signal, as taught by Lavoie, in the method and arrangement of Bouhenguel, in order to allow the system to function without disconnect during test mode.

As per Claims 7 and 19, Bouhenguel discloses a method and an arrangement as applied to claims 1 and 13, above.

Bouhenguel does not disclose the analog signals that simulates a fault condition of the first power line signal.

Lavoie discloses the analog signals simulating a fault condition of the first power line signal (column 5, lines 1-4).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to simulate a fault condition of the first power line signal, as taught by Lavoie, in the method and arrangement of Bouhenguel, in order to test the trip circuitry (Bouhenguel: column 5, lines 20-21).

As per Claims 8 and 20, Bouhenguel discloses a method and an arrangement as applied to claims 1 and 13, above.

Bouhenguel does not disclose the analog signal which simulates a non-fault condition of the first power line signal

Lavoie discloses the analog signals simulating a non-fault condition of the power line signal (column 4, lines 64-65, i.e. a signal which mimics a power line signal broadly includes fault and non-fault conditions).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to simulate a non-fault condition of the power line signal, as taught by Lavoie, in the method and arrangement of Bouhenguel, in order to test the response of the trip circuitry under normal conditions.

As per Claims 9 and 21, Bouhenguel discloses a method and an arrangement as applied to claims 1 and 13, above.

Bouhenguel does not disclose modifying the first analog signal based on the response, and receiving additional data representing a further response of said electrical switchgear system.

Lavoie discloses modifying the analog signal (column 5, lines 26-28 and 38-40) based on the response, and receiving additional data (by computer **122**) representing a further response of said electrical switchgear system (of FIG. 4).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the analog signal based on a response from the switchgear system, as taught by Lavoie, in the method and arrangement of Bouhenguel, in order to test for other conditions.

As per Claims 27, 29, 31, and 34, Bouhenguel discloses a method, an arrangement, storage media, and system as applied to claims 1, 13, 25, and 33 above.

Bouhenguel does not disclose that the first node continues to monitor the first power line signal and control the breaker during the application of the analog signal.

Lavoie that the node (102) continues to monitor the power line signal (106) and control the breaker (100) during the application of the analog signal (104) (i.e. signal 106 is not isolated from the node 102).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to continue to monitor the power line signal during the application of the analog signal, as taught by Lavoie, in the method and arrangement of Bouhenguel, in order to continue the operation of the breaker during the testing cycles.

10. Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouhenguel et al., US 5,742,513, in view of Weeks, US 5,168,261.

As per Claims 11 and 23, Bouhenguel discloses a method and an arrangement of testing an electrical switchgear system, as applied to Claims 1 and 13, above.

Bouhenguel does not explicitly disclose measuring a time required for the said first breaker to trip based on timestamps of said data.

Weeks discloses the method and arrangement for testing an electrical switchgear system, further comprising measuring a time required for the said breaker to trip based on timestamps of said data (column 5, lines 16-21).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to measure a trip time, as taught by Weeks, in the system and arrangement of Bouhenguel, in order set proper delay times for resetting the breaker.

11. Claims 36 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouhenguel et al., US 5,742,513, in view of Macbeth et al., US 6,266,219.

As per Claims 36 and 39, Bouhenguel discloses the arrangement and system, as applied to Claims 35 and 38 above, respectively.

Bouhenguel does not explicitly disclose the simulated event that comprises a differential ground fault between said first power line signal and said second power line signal.

Macbeth discloses a testing system wherein a simulated event comprises a differential ground fault between said first power line signal and said second power line signal (column 4, line 64 - column 5, line 3).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to simulate a differential ground fault, as taught by Macbeth, in the system of Bouhenguel, in order to test if the relay pass or fail this type of event.

***Allowable Subject Matter***

12. Claims 10, 22, 37, and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

As per Claims 10 and 22, the prior art fails to teach a method or arrangement for testing a switchgear system wherein a first and second analog test signals are applied simultaneously to a first and second node particularly characterized in the feature that the first analog signal and second analog signal, together, simulate a differential condition between the first power line signal and a second power line signal.

As per Claim 37 and 40, the prior art fails to teach an arrangement which comprises a processor that determines, from the data, whether the electrical switchgear system tripped the first and second breakers in a correct sequence.

***Response to Arguments***

13. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

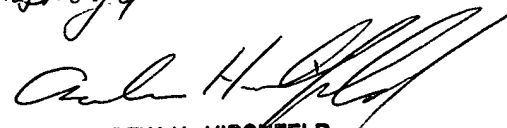
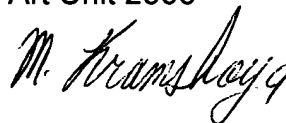
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Kramskaya whose telephone number is (571)272-2146. The examiner can normally be reached on M-F 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571)272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MK

Marina Kramskaya  
Examiner  
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